

## CLAIMS

- 1) 'Stereoflexography', it is an improvement characterized by catalyzing (curing), liquid or solid, photopolymer plates, only, by the bottom face (2), with two different and simultaneous levels of radiation. A lower level, designed to catalyze the relief base (8) generation, replacing 'back exposure' by percentile of grey (halftone); and a maximum, designed to catalyze the printing relief (10) generation, replacing 'main exposure', creating the high relief third dimension, which is necessary for those photopolymer plates destined for the flexographic and stamp sectors; by applying the traditional analogical exposure equipment, based on photoliths, negative films and lamps; or processing digitally in emission devices, modulating the radiation in optic semiconductors, replacing photoliths and negative films by LCD (Liquid Crystal Diode) or DMD (Digital Mirror Device);
- 15 2) The improvement is characterized by speeding up the process and reducing production time, for prosecuting, only, by the bottom face (2) of the photopolymer plate;
- 20 3) The improvement is characterized by eliminating the 'dot gain' usually occurring in the flexographic plates, which is caused by the effects of the refraction and persistence of radiation inside the photopolymer, thickening the top (10) of the dot when the expositions to radiation is done by the upper face (1) (main exposure) and by the bottom face (2) (back exposure), thereby damaging the resolution in these plates. By applying the emission, only, on the bottom face (2), the effects of refraction and persistence of radiation are inverted, sharpening the top (10) of the dot, and consequently improving resolution in these plates;
- 25 4) The improvement is characterized by eliminating the 'dot droop' usually occurring in the flexographic plates, which is caused by the effects of the refraction and persistence of radiation inside the photopolymer, sharpening the base (9) of the dot and thickening the top (10) of the dot, when the expositions to radiation is

done by the upper face (1) (main exposure) and by the bottom face (2) (back exposure), thereby weakening plate structure and reducing the durability of these plates. By applying the emission, only, on the bottom face (2), the effects of refraction and persistence of radiation are inverted, thickening the base (9) of the  
5 dot and sharpening the top (10) of the dot, thereby reinforcing plate structure and increasing the durability of these plates;

- 10 5) Because 'Stereoflexography' solves problems as neatness which is caused by processing by both the upper face (main exposure) and the bottom face (back exposure), it will allow the development of new light and compact pieces of equipment to manufacture photopolymer plates in the stamp sector, characterized by a fixed device, see fig.2, which process digitally, modulating the radiation in optic semiconductors, type LCD (Liquid Crystal Diode) or DMD (Digital Mirror Device) (1), necessary to catalyze the photopolymer plate (2), thereby transferring text and image files (3), to generate of the printing relief (5), simultaneously, with the percentile of grey (halftone) (4) to generate the relief base (6), directly from the computer (7), discarding, in these two improvements, the use of negative films and their supplies.
- 15 20 6) The elimination of 'dot gain' and 'dot droop' provided by 'Stereoflexography' will guarantee great neatness and longer lifetime to the flexographic plates processed in the new equipment, which is characterized by a mobile device, see fig.3 (1), in shaft X (2) and shaft Y (3), parallel to the photopolymer plate (4), processing digitally, modulating the radiation in optic semiconductors, type LCD (Liquid Crystal Diode) or DMD (Digital Mirror Device), necessary to catalyze the photopolymer plate (4), thereby transferring screen printing ('CMYK' system) of the texts and images files, to generate of the printing relief (5), simultaneously, with the percentile of grey (halftone) to generate the relief base (6), directly from the computer, discarding, in these two improvements, the use of photoliths and negative films.
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